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APPLICATION NO. FILING DATE FIRST NAMED INVENTOR ATTORNEY DOCKET NO. CONFIRMATION NO. 09/903,330 07/11/2001 Pradip Mitra 10919/25401 8427 **EXAMINER** 29937 7590 05/19/2004 SIDLEY AUSTIN BROWN & WOOD LLP SEDIGHIAN, REZA 717 NORTH HARWOOD ART UNIT PAPER NUMBER **SUITE 3400** DALLAS, TX 75201 2633

DATE MAILED: 05/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
		71
Office Action Summary	09/903,330	MITRA, PRADIP
	Examiner M. D. Codiobios	Art Unit
The MAILING DATE of this communication is	M. R. Sedighian appears on the cover sheet wi	th the correspondence address
Period for Reply	,	
A SHORTENED STATUTORY PERIOD FOR REI THE MAILING DATE OF THIS COMMUNICATION - Extensions of time may be available under the provisions of 37 CFR after SIX (6) MONTHS from the mailing date of this communication. - If the period for reply specified above is less than thirty (30) days, a - If NO period for reply is specified above, the maximum statutory peri - Failure to reply within the set or extended period for reply will, by state Any reply received by the Office later than three months after the material patent term adjustment. See 37 CFR 1.704(b).	N. 1.136(a). In no event, however, may a re- reply within the statutory minimum of thirty iod will apply and will expire SIX (6) MON tute, cause the application to become AB.	eply be timely filed y (30) days will be considered timely. THS from the mailing date of this communication. ANDONED (35 U.S.C. § 133).
Status		
1) Responsive to communication(s) filed on 11	<u> July 2001</u> .	
2a) ☐ This action is FINAL . 2b) ☑ T	his action is non-final.	•
3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is		
closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.		
Disposition of Claims		
4) ⊠ Claim(s) 1-50 is/are pending in the application 4a) Of the above claim(s) is/are with the state of the above claim(s) is/are with the state of the above claim(s) is/are allowed. 5) ⊠ Claim(s) 21-35 is/are rejected. 7) □ Claim(s) is/are objected to. 8) □ Claim(s) are subject to restriction and	Irawn from consideration.	
Application Papers		
 9) The specification is objected to by the Exam 10) The drawing(s) filed on 11 July 2001 is/are: Applicant may not request that any objection to the Replacement drawing sheet(s) including the corr 11) The oath or declaration is objected to by the 	a) accepted or b) object he drawing(s) be held in abeyan rection is required if the drawing(ce. See 37 CFR 1.85(a). s) is objected to. See 37 CFR 1.121(d).
Priority under 35 U.S.C. § 119		
12) Acknowledgment is made of a claim for foreign a) All b) Some * c) None of: 1. Certified copies of the priority documed 2. Certified copies of the priority documed 3. Copies of the certified copies of the papplication from the International Burnet * See the attached detailed Office action for a limit of the papplication from the International Burnet * See the attached detailed Office action for a limit of the papplication from the International Burnet * See the attached detailed Office action for a limit of the papplication from the International Burnet * See the attached detailed Office action for a limit of the papplication from the International Burnet * See the attached detailed Office action for a limit of the papplication from the International Burnet * See the attached detailed Office action for a limit of the papplication from the International Burnet * See the attached detailed Office action for a limit of the papplication from the International Burnet * See the attached detailed Office action for a limit of the papplication from the International Burnet * See the attached detailed Office action for a limit of the papplication from the International Burnet * See the attached detailed Office action for a limit of the papplication from the International Burnet * See the attached detailed Office action for a limit of the papplication from the International Burnet * See the attached detailed Office action for a limit of the papplication from the International Burnet * See the attached detailed Office action for a limit of the papplication from the International Burnet * See the attached detailed Office action for a limit of the papplication from the International Burnet * See the attached detailed Office action for a limit of the papplication from the International Burnet * See the attached detailed Office action for a limit of the papplication from the International Burnet * See the attached detailed Office action for a limit of the papplication from the International Burnet * See the attached Detaile	ents have been received. ents have been received in Apriority documents have been eau (PCT Rule 17.2(a)).	oplication No received in this National Stage
Attachment(s)		
1) Notice of References Cited (PTO-892)		ummary (PTO-413)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/Paper No(s)/Mail Date 2. 	7 Paper No(s 08) 5) Notice of In 6) Other:)/Mail Date formal Patent Application (PTO-152)

Art Unit: 2633

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 2. Claims 21-29 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goossen et al. (US Patent No: 5,949,561) in view of Spears (US Patent No: 5,455,421) and in further view of Meli et al. (US Patent No: 6,414,769).

Regarding claim 21, Goossen teaches a method for receiving (200, fig. 4) a high bandwidth multiple wavelength optical data stream (col. 1, lines 10-25 and 200, fig. 4) of plurality of different wavelength channels (col. 5, lines 7-15, 22-28), comprising the steps of: utilizing a plurality of photodetectors (col. 5, lines 15-20 and 2, fig. 4) to receive the plurality of wavelength channels (col. 5, lines 40-45), each individual one of the wavelength channels being absorbed by one of the respective photodetectors (col. 5, lines 42, 45), each individual one of the photodetectors outputting at least a portion of a respective wavelength channel based on an absorbed respective one of the wavelength channels (col. 5, lines 16-21). Goossen differs from the claimed invention in that Goosen do not disclose each one of the photodetectors comprises of a diffractive resonant optical cavity. Spears teaches a photodetector for detecting optical radiation at a predetermined wavelength (col. 2, lines 47-50), wherein the photodetector is comprised of a diffractive resonant optical cavity (col. 2, lines 48-64). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate photodetectors with resonant optical cavity such as the one of Spears for the photodetectors of Goossen in order to provide a photodetctor structure that exhibits increased sensitivity for the

Art Unit: 2633

incident optical radiation. The modified optical receiving system of Goossen and Spears differs from the claimed invention in that Goossen and Spears do not teach amplifying each respective generated wavelength channels. However, it is well known to amplify the electrical signal to boost the signal strength. Meli teaches an optical receiver (208, fig. 2) and an amplifier (209, fig. 2) that amplifies the signal outputted by the receiver (col. 8, lines 57-60). Therefore, it would have been obvious to an artisan at the time of invention to incorporate amplifiers such as the one of Meli in the modified opto-electrical receiving system of Goossen and Spears in order to boost and increase, or reshape the signal strength for further signal processing.

Regarding claim 22, Goossen teaches an odd integer multiple number of wavelength channels (col. 5, lines 22-28).

Regarding claim 23, Spears teaches the receiver utilize respective portions of respective wavelength channel to reduce noise (col. 1, lines 42-47, col. 2, lines 33-34).

Regarding claims 24-28, Spears teaches the diffractive resonant optical cavity comprises of semiconductor material of III-V, or AIGaAs/GaAs, or InGaAs/Inp, or multiple quantum well (col. 3, lines 2-4, col. 5, lines 21-27).

Regarding claim 29, Goossen teaches the plurality of wavelength channels comprise infrared radiation (col. 2, lines 16-25).

Regarding claim 33, Goossen teaches generating light having a plurality of wavelengths (col. 5, lines 23-25), and modulating light of each individual wavelength of the plurality of wavelengths to create the plurality of wavelength channels (col. 5, lines 8-10 and 402, 404, fig. 4).

Art Unit: 2633

3. Claims 30-31 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goossen et al. (US Patent No: 5,949,561) in view of Spears (US Patent No: 5,455,421) and in view of Meli et al. (US Patent No: 6,414,769) and in further view of Fry (US Patent No: 4,322,693).

Regarding claims 30-31 and 34, the modified optical receiving system of Goossen, Spears, and Meli differs from the claimed invention in that Goossen, Spears, and Meli do not disclose carbon dioxide laser corresponding to P and R transitions. Fry teaches carbon dioxide laser corresponding to P and R transitions (col. 2, lines 10-20, 44-48, col. 7, lines 59-63). Therefore, it would have been obvious to an artisan at the time of invention to incorporate a carbon dioxide laser such as the one of Fry for optical transmission sources in the modified optical receiving system of Goossen, Spears, and Meli in order to provide an efficient and reliable tunable laser that generates a plurality of wide output wavelengths.

4. Claims 32 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goossen et al. (US Patent No: 5,949,561) in view of Spears (US Patent No: 5,455,421) and in view of Meli et al. (US Patent No: 6,414,769) and in further view of Ferrieu (US Patent No: 6,233,380).

Regarding claims 32 and 35, the modified optical receiving system of Goossen, Spears, and Meli differs from the claimed invention in that Goossen, Spears, and Meli do not disclose a quantum cascade laser. Ferrieu teaches a quantum cascade laser (col. 2, lines 43-50). Therefore, it would have been obvious to an artisan at the time of invention to incorporate a quantum cascade laser such as the one of Ferrieu for optical transmission sources in the modified optical

Art Unit: 2633

receiving system of Goossen, Spears, and Meli in order to provide continuous-wave and high output power light signals.

- Claims 1-20 and 36-50 are allowed over prior art of record. 5.
- 6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. R. Sedighian whose telephone number is (703) 308-9063. The examiner can normally be reached on M-F (from 9 AM to 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (703) 305-4729. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

M.R. SEDIGHIAN
Patent Examiner
Art Unit: 2633